

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 25

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

Ex parte SHIRO KAMIYAMA,  
MASANORI KOSUGI,  
MASAHIRO KURATA,  
SADAQ SHIRAISHI,  
and  
MICHIO KOBAYASHI

MAILED

FEB 28 2002

PAT & TM OFFICE  
BOARD OF PATENT APPEALS  
AND INTERFERENCES

Appeal No. 1999-0761  
Application No. 08/174,957

ON BRIEF

Before KIMLIN, LIEBERMAN, and PAWLIKOWSKI, Administrative Patent Judges.

LIEBERMAN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 1, 7 through 15 and 17 as amended subsequent to the final rejection, which are all of the claims pending in this application. Claims 2 through 6 and 16 stand withdrawn from consideration pursuant to a requirement for election of species.

### THE INVENTION

The invention is to a method for treating an aluminum surface wherein an aluminum alloy heated to a temperature of 200°C or above is etched in a single step process by exposing the surface to a basic solution containing a chelating agent. Additional limitations are disclosed in the following illustrative claim.

### THE CLAIM

Claim 1 is illustrative of appellants' invention and is reproduced below:

1. A method for treating the surface of an aluminum alloy high-temperature processed article, comprising heating an aluminum alloy containing Mg at a high temperature of 200° of [sic, or] above, etching the surface by a single step process of exposing the surface to an aqueous solution containing a chelating agent wherein the aqueous solution consists of a solution having a pH of 7 or higher, and then carrying out hydration oxidation treatment.<sup>1</sup>

### THE REFERENCES OF RECORD

As evidence of obviousness, the examiner relies upon the following references:

Chakrabarti et al. (Chakrabarti) 5,055,257 Oct. 8, 1991

Lowenheim, Electroplating, pp. 74-77, 89-91, and 463-67 (McGraw-Hill Book Co., 1978)

### THE REJECTIONS

Claims 1, 7 through 15 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Lowenheim.

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<sup>1</sup>Claim 1 as originally filed contained the word "or." The amendments to claim 1 thereafter contained the word "of" in place of "or." The change in terminology, however, was not made in accordance with 37 CFR § 1.121(b).

Claims 1, 7 through 15 and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chakrabarti in view of the admitted prior art and Lowenheim.

OPINION

We have carefully considered all of the arguments advanced by the appellants and the examiner, and agree with the appellants that the rejections of claims 1, 7 through 15 and 17 are not well founded. Accordingly, we reverse these rejections.

The Rejections under § 103

"[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability." See *In re Oetiker*, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The examiner relies upon a combination of two or three references to reject the claimed subject matter and establish a *prima facie* case of obviousness. The premise of each rejection is the same. It is the examiner's position that, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a chelating agent in an alkaline etchant." See Answer page 8. The examiner further amplifies her position by stating, "it would have been obvious to have utilized this one improved etching step rather than the two less efficient etching steps taught by 1-212775." See Supplemental Examiner's Answer, page 3. We disagree.

The admitted prior art relied upon by the examiner, Japan Patent Laid-open No. 1-212775, specification, page 3, discloses, "that etching is carried out in an aqueous

acidic solution of pH 2 or less containing chloride ions, followed by etching in an aqueous alkaline solution of pH 13 or more." The reference however, fails to teach, "a single step [etching] process," the presence of a chelating agent or even a specific teaching that the etching is applied to an aluminum alloy within the scope of the claimed subject matter.

With respect to the disclosure of Lowenheim, we find numerous disclosures regarding the utilization of alkaline cleaners and etchants. We find that Lowenheim discloses in reference to cleaning metals in general that, "[n]o single alkali makes a good cleaner; a combination of alkalis with appropriate soaps or surfactants, chelating agents, and other ingredients is necessary for maximum effectiveness." See Lowenheim, page 75. We conclude that Lowenheim at that site refers generally to the cleaning of metals, as opposed to the etching of metals and refers to metals generally in the absence of specific reference to aluminum alone, let alone aluminum alloys. We further find a discussion of chelating agents on page 76 of Lowenheim wherein it is stated that, "chelating agents . . . can soften water and tie up many metal ions. They are used in many nonphosphated cleaners, etchants for aluminum, alkaline derusting and descaling agents, and in electrocleaners." No reference, however, is made to aluminum alloys in general or to the specific aluminum alloys of the claimed subject matter. Indeed, where the reference specifically refers to aluminum and its alloys, Lowenheim, pages 89-91, alloying elements such as magnesium are disclosed. See, Lowenheim, page 90. Lowenheim, however, states therein that, "[c]leaning and conditioning pretreatments are necessary, as for all metals; vapor degreasing or other solvent treatment, as usual, removes the bulk of oils and greases. This

is followed by mild etching in alkaline cleaner, containing typically 25 g/L of sodium carbonate and 25 g/L of trisodium phosphate at 70-85° C for 1 to 3 min." Id.

Based upon the above findings, we conclude that the person having ordinary skill in the art would be directed to use the specific alkaline etchant for aluminum alloys disclosed by Lowenheim at page 90 or would be directed to add a chelating agent to the etchant disclosed by the admitted prior art. On the record before us, however, the fact that other etchants are known or that chelating agents may be added to etchant compositions, does not provide the requisite motivation to delete the aqueous acidic etching solution having a pH of 2 or less from the admitted prior art, and add a chelating agent thereto in order to result in a single step process of exposing the surface to an aqueous solution containing a chelating agent wherein the aqueous solution consists of a solution having a pH of 7 or higher as required by the claimed subject matter. See In re Dembiczak, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999) ("[T]he best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references.")

As to the second rejection directed to Chakrabarti, the reference is directed the preparation of the aluminum alloys of the claimed subject matter and does not contribute in any manner to the deficiencies in combining the admitted prior art with Lowenheim.

## DECISION

The rejection of claims 1, 7 through 15 and 17 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Lowenheim is reversed.

The rejection of claims 1, 7 through 15 and 17 under 35 U.S.C. § 103(a) as being unpatentable over Chakrabarti in view of the admitted prior art and Lowenheim is reversed.

**The decision of the examiner is reversed.**

**REVERSED**

*Edward C. Kimlin*  
**EDWARD C. KIMLIN**  
Administrative Patent Judge

PAUL LIEBERMAN  
Administrative Patent Judge

*Beverly Pawlikowski*  
BEVERLY A. PAWLICKOWSKI  
Administrative Patent Judge

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Appeal No. 1999-0761  
Application No. 08/174, 957

7

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